

CLINICAL PHYSIOLOGY

CARDIAC Physiology has a long association with the British Cardiovascular Society (BCS). The Professional Body, the Society for Cardiological Science and Technology (SCST) is an Affiliated Group of BCS with a seat on their Council. In addition, SCST has reciprocal Council arrangements with the British Society of Echocardiography and Heart Rhythm UK. Diagnostic services in Cardiac Physiology are found in primary, secondary and tertiary care centres. Whilst cardiac physiologists work closely with cardiologists and cardiac surgeons, they also provide diagnostic services to all specialities across the NHS, often including direct access to services for GPs.

Cardiac Physiologists work autonomously over a wide range of diagnostic and therapeutic specialities, from in-utero scanning to end of life care. The work load varies: some investigations are high volume whilst others are extremely specialised and only relevant to a smaller patient population.

For the following investigations the cardiac physiologist will carry out the procedure adapting it in the light of emerging findings as it progresses:

- ECG - the base line investigation to establish heart rate and rhythm
- Ambulatory monitoring for ECG – this may be for a period between 24 hours and seven days and is used to determine rhythm abnormalities. Patients with infrequent symptoms may be issued with an event recorder which they may carry with them for a month or more
- Ambulatory Blood Pressure monitoring – especially useful in establishing white coat hypertension and monitoring the efficacy of treatment
- Exercise Tolerance Testing – to objectively quantify a patient's exercise capacity and to demonstrate what happens when the patient's heart is put under stress
- Echocardiography – uses ultrasound in order to visualise the moving heart, great vessels and valves. The investigation can be expanded to use Doppler to establish blood flow. Transoesophageal echocardiography can produce internal images from the back of the heart and stress echocardiography that provides functional imaging

Sonographers frequently run their own clinics (e.g. valve surveillance) or work within a multidisciplinary team to maximise therapy (e.g. heart failure).

The work entails all aspects of clinical care including triaging referrals; diagnostic analysis and clinical reporting that significantly contributes to patient management with cardiac physiologists forming an important part of the invasive multi-disciplinary team, carrying out the following clinical interventions:

- During cardiac catheterisation and angioplasty they measure the pressures within the heart and great vessels. Many procedures that once required open heart surgery are now dealt with within the cardiac catheter laboratory and cardiac physiologists contribute to all of these
- Electrophysiology studies map electrical pathways within the heart and may lead to ablations. This is highly specialised work carried out in tertiary centres and cardiac physiologists are an essential part of the team
- Pacemaker implantation provides a life line for many patients. During the procedure physiologists measure efficacy of the lead and monitor the patient's condition throughout. The pacemaker may be inserted to deal with slow or fast heart rates or to cope with a particular condition, including implantable defibrillators. For the remainder of the patient's life they will regularly visit a Pacemaker follow-up clinic run by cardiac physiologists.

Teaching and Training is a large part of the Cardiac Physiologists responsibilities. Besides teaching those on the Healthcare Scientist degree programme, they support a range of multidisciplinary professionals engaged in all aspects of cardiology. They have a role to play in the training of specialist registrars (consultant cardiologists in training) and specialist cardiac nurses. Cardiac Physiologists are engaged in research and development: proposing and contributing to clinical trials and preparing ethics applications. Cardiac Physiologists submit conference abstracts for oral or poster presentation and also submit to journals.